UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte RONALD BJORKLUND, RAJ BRIDGELALL,
WILLIAM DEROUCHEY, CHARLES G. FUREDY,
NARAYAN NAMBUDIRI, and RICHARD WATSON

Appeal 2006-2002
Application 09/483,167
Technology Center 2600

Decided: September 24, 2007

Before ANITA PELLMAN GROSS, JEAN R. HOMERE, and
ST. JOHN COURTENAY III, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from the Examiner's rejection of claims 34, 37-48, 51-55, and 58. We have jurisdiction under 35 U.S.C. § 6(b). We AFFIRM.

We note the Examiner has allowed claims 35 and 36 and has indicated that claims 49, 50, 56, and 57 would be allowable if rewritten in independent form (*see* Final Rejection mailed Oct. 26, 2004, page 4).

THE INVENTION

The disclosed invention relates to multi-tier wireless communications architecture, applications and methods of using wireless units having differing communication functionalities and ranges (Specification 1).

Independent claim 34 is illustrative:

34. A multi-tier system for digital radio communication, comprising:

a processor-based host adapted to control a remote unit;

a first-tier base station communicatively coupled to the host, wherein the first-tier base station operates in accordance with a first communications protocol;

a first second-tier base station communicatively coupled to the first-tier base station, wherein the first second-tier base station and the first-tier base station communicate using the first communications protocol; and

a second second-tier base station wirelessly coupled to the first second-tier base station, wherein the second second-tier base station is intermediate the first second-tier base station and the remote unit, and wherein the first second-tier base station is capable of communicating with the second second-tier base station without an intervening first-tier base station using a different communications protocol from the first communications protocol,

wherein the host is adapted to control the remote unit through the first-tier base station, the first second-tier base station, and the second second-tier base station.

THE REFERENCES

Johnson	US 5,673,252	Sep. 30, 1997
Mahany	US 5,790,536	Aug. 4, 1998
del Castillo	US 6,275,166 B1	Aug. 14, 2001

THE REJECTIONS

Claims 34, 37-43, 45-48, 51-55, and 58 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Mahany in view of del Castillo.

Claim 44 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over the teachings of Mahany in view of del Castillo, and further in view of Johnson.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for the respective details thereof.

STATEMENT OF LAW

"What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under *§ 103*." *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1742, 82 USPQ2d 1385, 1397 (2007). To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 1740, 82 USPQ2d at 1396.

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1455 (Fed. Cir. 1998)). Therefore, we look to Appellants' Briefs to show error in the proffered prima facie case.

ANALYSIS

We consider first the Examiner's rejection of claims 34, 37-43, 45-48, 51-55, and 58 as being unpatentable over the teachings of Mahany in view of del Castillo. Since Appellants' arguments have treated these claims as a single group which stands or falls together, we will select independent claim 34 as the representative claim. *See* 37 C.F.R. § 41.37(c)(1)(vii)(2004).

Appellants contend that neither del Castillo nor Mahany includes the requisite suggestion or motivation to combine the references in the manner suggested by the Examiner (Br. 8). Appellants argue that the two references teach away from the claimed invention. Specifically, Appellants contend that Mahany, by introducing the notion of peripheral LANs, teaches away from the concept of host-based control because Mahany's roaming devices (including terminal 3007) can establish a peripheral LAN connection with other roaming devices on as-needed basis without the premise LAN and/or the host 3011 (*see* Mahany, Fig. 28A) (Br. 13). In contrast, Appellants

assert that the claimed invention calls for the host computer to control the remote device through the first-tier and second-tier base stations (*id.*). Appellants further contend the Examiner has failed to establish that the proffered combination of Mahany and del Castillo would have a reasonable expectation of success (Br. 15).

The Examiner disagrees. In the rejection, the Examiner proffers the following motivation for modifying Mahany with the teachings of del Castillo:

> [I]t would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Mahany as taught by del Castillo because a host that controls a remote unit through a first-tier base station, a first second-tier base station, and a second second-tier base station is able to control remote appliances that are beyond the host's communications range while maintaining limited transmission power and distance to avoid governmental site licensing (see del Castillo, Col. 4, lines 62-67; Col. 5, lines 1-4; and Col. 8, lines 25-27).

(Answer 4-5, *see also* Answer 10-11 where the Examiner essentially restates the same motivation).

After carefully considering all of the evidence before us, we find Appellants' "teaching away" argument unavailing. We disagree with Appellants' contention that del Castillo's notion of peripheral LANs teaches away from Mahany's concept of host-based control (*see* Br. 13). In particular, we find Mahany discloses at least one embodiment where host computer 3011 controls printer 3013 (remote unit) to print cross-referenced information, as follows:

> In addition, the host computer 3011 may, for example, forward cross-referenced information relating to the collected numbers or codes back through the network for display on the terminal 3007 or for printing on a printer 3013.

(Mahany, col. 43, ll. 27-31).

Nevertheless, in reviewing the Examiner's proffered motivation of using multiple tiers (i.e., base stations) to extend the range of host control in a manner that avoids governmental site licensing, we find Mahany already teaches "base stations" or communication nodes (i.e., low power 27 MHz peripheral LAN radio slave devices) that extend the range of host control while maintaining limited transmission power and distance to avoid governmental site licensing, as follows:

> In embodiments where cost and additional weight is not an issue, a dual radio unit configuration for potential peripheral LAN master devices may provide several advantages. For example, simultaneous transceiver operation is possible by choosing a different operating band for each radio. In such embodiments, a 2.4 GHz radio is included for premises LAN communication while a 27 MHz radio supports the peripheral LAN. Peripheral LAN slave devices receive only the 27 MHz radio, while the non-potential peripheral LAN participants from the premises LAN are fitted with only the 2.4 GHz radios. Potential peripheral LAN master devices receive both radios. The *low power 27 MHz peripheral LAN* radio is capable of reliably transferring information at a range of approximately *40 to 100 feet* asynchronously at 19.2 KBPS. *An additional benefit of using the 27 MHz frequency is that it is an unlicensed frequency band.* The 2.4 GHz radio provides sufficient power (up to 1 Watt) to communicate with other premises LAN devices. *Another benefit of choosing 2.4 GHz or 27 MHz bands is that neither require FCC licensing.* Many different frequency choices could also be made such as the 900 MHz

> band, UHF, etc. Alternatively, infrared communication may be used in situations where line of sight may be achieved between devices on the network [emphasis added].

(Mahany, col. 49, ll. 42-65).

Thus, we find the Examiner's proffered motivation is facially deficient given that an artisan having knowledge of Mahany would not have reasonably looked to a secondary reference (del Castillo) to solve a problem that was already solved by Mahany (*id.*).

Nevertheless, *this does not end the inquiry before us*. We note that in *KSR*, the Supreme Court stated:

> When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

KSR, 127 S. Ct. at 1740, 82 USPQ2d at 1396.

This reasoning is applicable here. In spite of the Examiner's facially deficient motivation under a "teaching, suggestion, motivation" (TSM) rationale, we nevertheless find the proffered combination of Mahany and del Castillo reasonably teaches and/or suggests Appellants' claimed

invention in terms of *familiar elements* that would have been combined by an artisan having common sense using *known methods* to achieve a *predictable result* at the time of the invention. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161, 82 USPQ2d 1687, 1691 (Fed. Cir. 2007) (quoting *KSR*, 127 S. Ct. at 1739-40, 82 USPQ2d at 1395 (2007)).

Here, we note that Mahany (in at least one embodiment) and del Castillo are each directed to multi-tiered network control of remote units by a host computer. As discussed *supra*, Mahany teaches using host computer 3011 to control printing on remote printer 3013, where the host computer and the printer are coupled through various intermediate access points or communication nodes, such as access points 3015 and 3017 (*see* Mahany, Fig. 28A, col. 43, ll. 27-31).

We note that the secondary del Castillo reference teaches multi-tiered network control of remote units (i.e., appliance devices 24) by a host computer (Headend Control Computer 16) via Headend Transceiver Unit 18 and a plurality of Appliance Management Stations 12 (*see* del Castillo, Fig. 1, col. 4, ll. 7-15). At least some of the Appliance Management Stations (AMS 12) operate (in at least one embodiment) as intermediate relay nodes in the network (*see* del Castillo, Fig. 1, col. 4, l. 52 through col. 5, l. 9).

In particular, we note that the Examiner merely looks to the secondary del Castillo reference for teaching controlling a remote unit through first and second second-tier base stations (*see* Answer 3).

After carefully considering the record before us, we find that multi-level (i.e., multi-tiered) networks were notoriously well known in the art at the time of the instant invention, as evidenced by the teachings of Mahany and del Castillo. Therefore, we conclude the weight of the evidence shows that the selection and arrangement of plural tiers of network communication nodes (i.e., corresponding to the instant claimed first and second second-tier base stations) according to the particular requirements of a given network is nothing more than the predictable use of familiar prior art elements according to their established functions. *See KSR*, 127 S. Ct. at 1740, 82 USPQ2d at 1396.

Accordingly, we find no support for Appellants' further contention that the Examiner's proffered combination of Mahany and del Castillo would not have a reasonable expectation of success, or that the Examiner has failed to establish such a reasonable expectation of success in formulating the rejection. In contrast, we find the predictable use of familiar prior art elements according to their established functions would have clearly conveyed a reasonable expectation of success to a person of ordinary skill having common sense at the time of the invention.

In the Reply Brief, Appellants present a new argument that the del Castillo secondary reference at least fails to teach the instant claimed "first second-tier base station" that communicates with the "first-tier base station" using a first communication protocol and must also be capable of communication with the "second second-tier base station . . . using a *different* communications protocol from the first communications protocol." (Reply Br. 5, ¶1; *see also* claim 34). In particular, Appellants contend that

del Castillo does not teach any Appliance Management Stations (AMS 12) that use two different protocols (Reply Br. 5, ¶2). Appellants contend that all Appliance Management Stations (AMS 12) disclosed by del Castillo use the same communication protocol (Reply Br. 6, ¶1).

In response, we find it unnecessary to decide the question of whether all Appliance Management Stations 12 disclosed by del Castillo use the same communication protocol. Instead, we find the Examiner has relied upon the primary Mahany reference for the teaching of different protocols, e.g., protocols typically associated with a hard-wired backbone local area network, frequency hopping wireless protocols, and single frequency wireless protocols (*see* Answer 3). We note that our reviewing court has determined that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. *In re Merck & Co., Inc.*, 800 F.2d 1091, 1097, 231 USPQ 375, 380 (Fed. Cir. 1986).

Here, the secondary del Castillo reference must be read not in isolation, but for what it fairly teaches in combination with the prior art as a whole. Indeed, we note that the primary Mahany reference expressly teaches multiple protocols and associated common industry interfaces (i.e., familiar elements) that we find would have been combined by an artisan having common sense using *known methods* to achieve a *predictable result* at the time of the invention, as follows:

> Many different interfaces 3115 are used and the choice will depend upon the connection port of the device to which the transceiver 3110 will be attached. Virtually any type of interface 3110 could be adapted for use with the transceiver 3110 of the present invention. Common

> industry interface standards include RS-232, RS-422, RS-485, 10BASE2 Ethernet, 10BASE5 Ethernet, 10BASE-T Ethernet, fiber optics, IBM 4/16 Token Ring, V.11, V.24, V.35, Apple Localtalk and telephone interfaces. In addition, via the interface 3115, the microprocessor 3120 maintains a radio independent, interface protocol with the attached network device, isolating the attached device from the variations in radios being used.

(Mahany, col. 50, ll. 24-36).

> The microprocessor 3120 also controls the radio unit 3112 to accommodate communication with the either the *premises LAN*, the *peripheral LAN*, or both (for *dual mode* radios). Moreover, the same radio might also be used for *vehicular LAN* and *radio WAN* communication as described above. For example, a radio located in a vehicle or in a hand held terminal can be configured to communicate not only within *a local network*, but *might also be capable of receiving paging messages* [emphasis added].

(Mahany, col. 50, ll. 37-45).

> More specifically, in a main mode transceiver, the microprocessor 3120 utilizes *a premises LAN protocol* to communicate with the premises LAN. Similarly, in a peripheral LAN mode transceiver, the microprocessor 3120 operates pursuant to *a peripheral LAN protocol* to communicate in the peripheral LAN. In the dual mode transceiver, the microprocessor 3120 manages the use of and potential conflicts between *both the premises and peripheral LAN protocols*. Detail regarding the premises and peripheral LAN protocols can be found in reference to FIGS. 33-36 below.

(Mahany, col. 50, ll. 46-55).

For at least the aforementioned reasons, we conclude the Examiner has established a prima facie case of obviousness that has not been persuasively rebutted by Appellants by a showing of insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence

of secondary indicia of nonobviousness. Accordingly, we sustain the Examiner's rejection of representative claim 34 as being unpatentable over Mahany in view of del Castillo.

Pursuant to 37 C.F.R. § 41.37(c)(1)(vii), we have decided the appeal with respect to claims 37-43, 45-48, 51-55, and 58 in this group on the basis of the selected claim alone. Therefore, we will sustain the Examiner's rejection of these claims as being unpatentable over Mahany in view of del Castillo for the same reasons discussed *supra* with respect to representative claim 34.

Dependent claim 44

Appellants have not presented any substantive arguments directed to the separate patentability of dependent claim 44. In the absence of a separate argument with respect to the dependent claims, those claims stand or fall with the representative independent claims. *See In re Young,* 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991). *See also* 37 C.F.R. § 41.37(c)(1)(vii)(2004). Therefore, we will sustain the Examiner's rejection of claim 44 as being unpatentable over Mahany in view of del Castillo and Johnson for the same reasons discussed *supra* with respect to independent claim 34.

DECISION

Based on the findings of facts and analysis above, we conclude that the Examiner did not err in rejecting claims 34, 37-48, 51-55, and 58 under 35 U.S.C. § 103(a) for obviousness. Therefore, the decision of the Examiner rejecting claims 34, 37-48, 51-55, and 58 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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